DOCUMENT RESUME

ED 428 900 PS 027 488

AUTHOR	Leerkes, Esther M.; Crockenberg, Susan
TITLE	The Development of Maternal Self-Efficacy.
PUB DATE	1999-04-00
NOTE	16p.; Paper presented at the Biennial Meeting of the Society for Research in Child Development (Albuquerque, NM, April 15-18, 1999).
PUB TYPE	Reports - Research (143) -- Speeches/Meeting Papers (150)
EDRS PRICE	MF01/PC01 Plus Postage.
DESCRIPTORS	Infants; *Influences; *Mothers; Parent Child Relationship; Parent Role; Personality; *Self Efficacy; Self Esteem; Social Support Groups; Theories
IDENTIFIERS	Maternal Sensitivity

ABSTRACT

This study tested specific hypotheses about factors that influence the development of maternal self-efficacy, and the influence of maternal self-efficacy and infant temperament on maternal behavior. Ninety-two primiparous mothers and their 6-month-olds participated in the study. Mothers completed questionnaires about developmental history and self-esteem prenatally and social support, infant temperament, and maternal self-efficacy postnatally; mothers also participated in a laboratory observation with their infants. Findings were as follows: Maternal self-efficacy was influenced by early developmental history as mediated by global self-esteem. Infant temperament, social support, and their interactions also predicted maternal self-efficacy. Infant soothability buffered the negative effect of high infant fear and frustration on maternal self-efficacy. Infant frustration and social support from partner and others had a cumulative effect, that is, mothers with less easily frustrated infants and good support from partners and others had significantly higher maternal self-efficacy than mothers with less easily frustrated infants and poor support. Maternal self-efficacy was not associated with maternal sensitivity. Although maternal self-efficacy interacted with infant temperament to predict maternal sensitivity and responsiveness, the effect was not as predicted. Mothers who perceived their infants as easily frustrated were less likely to behave sensitively if they had extremely high versus moderately high maternal self-efficacy. There was no difference in maternal behavior based on maternal self-efficacy when mothers perceived their infants as less easily frustrated. (Contains 23 references.) (Author/KB)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED 428 900

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)
X This document has been reproduced as received from the person or organization originating it.
☐ Minor changes have been made to improve reproduction quality.
• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

The Development of Maternal Self-Efficacy

Esther M. Leerkes

Susan Crockenberg

University of Vermont

Poster presented at the Biennial Meeting of The Society for Research in Child Development, Albuquerque, New Mexico, April 1999.

This project was partially funded by a SUGR and FAME award from the University of Vermont

PERMISSION TO REPRODUCE AND DISSEMINATE THIS MATERIAL HAS BEEN GRANTED BY

Esther M. Leerkes

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

Abstract

The present study tested specific hypotheses about: 1) factors that influence the development of maternal self-efficacy; and 2) the influence of maternal self-efficacy and infant temperament on maternal behavior. Ninety-two primiparous mothers and their six-month old infants participated in the study. Mothers completed questionnaires about developmental history and self-esteem prenatally and social support, infant temperament, and maternal self-efficacy postnatally and participated in a laboratory observation with their infants. Results were as follows: maternal self-efficacy was influenced by early developmental history as mediated by global self-esteem. Infant temperament, social support, and their interactions also predicted maternal self-efficacy. Specifically, infant soothability buffered the negative effect of high infant fear and frustration on maternal self-efficacy. Infant frustration and social support from partner and others had a cumulative effect: mothers with less easily frustrated infants and good support from partners and others had significantly higher maternal self-efficacy than mothers with less easily frustrated infants and poor support. Maternal self-efficacy was not associated with maternal sensitivity. Although maternal self-efficacy interacted with infant temperament to predict maternal sensitivity and responsiveness, the effect was not as predicted. Mothers who perceived their infants as easily frustrated were less likely to behave sensitively if they had extremely high versus moderately high maternal self-efficacy. There was no difference in maternal behavior based on maternal self-efficacy when mothers perceived their infants as less easily frustrated. These findings are discussed in relation to prior studies of maternal self-efficacy and maternal behavior with particular emphasis on the theory of illusory control.

PS 027488

BEST COPY AVAILABLE

Introduction

Although studies of maternal self-efficacy as a potential determinant of parenting have recently increased (Donovan & Leavitt, 1989; Donovan, Leavitt & Walsh, 1990; Teti & Gelfand, 1991), little is known about the development of maternal self-efficacy and the process by which it influences maternal behavior. Researchers have focused primarily on concurrent correlates of maternal self-efficacy, such as depression, perceived infant temperament, and social support (Curtona & Troutman, 1986; Gross, Conrad, Fogg & Wothke, 1994; Teti & Gelfand, 1991). Long-term developmental predictors of maternal self-efficacy, such as early childhood relationships and enduring personality characteristics, have been neglected. In the present study, I tested a developmental model of the origins of maternal self-efficacy and examined the impact of maternal self-efficacy in conjunction with infant temperament on maternal behavior during infancy.

Hypotheses

1. As illustrated in Figure 1, parenting history, self-esteem, social support, and infant temperament will be associated with maternal self-efficacy as either main effects or interactions. Specifically:
    a) High parental care and low overprotection, high self-esteem, and good social support will all be directly associated with maternal self-efficacy as main effects.
    b) Self-esteem will partially mediate the association between parenting history and maternal self-efficacy.
    c) Social support and infant temperament will interact to predict maternal self-efficacy. Specifically, social support will have a positive impact on maternal self-efficacy, but the impact on maternal self-efficacy will be greater for mothers of reactive infants.

2. Infant temperament and maternal self-efficacy will be associated with maternal behavior as main effects or interaction effects.
    a) High maternal self-efficacy will be directly associated with sensitive, responsive, and appropriate maternal behavior.
    b) Maternal self-efficacy and infant temperament will interact to predict maternal behavior. Specifically, mothers with reactive infants will respond to their infants more sensitively if they have high versus low maternal self-efficacy.

Method

Participants. Ninety-two primiparous mothers recruited from local prenatal classes served as participants. The mean age of mothers was 29.1 with a range of 20 to 41. The average level of education was 15.4 years. The mean family income was approximately $61,000 with a range from $8,000 to $200,000, and 90% of the mothers were employed during the initial contact. The majority (94%) of the mothers were Caucasian, and most (99%) were married or living with their partner. Sixty percent of the infants were male and 40% were female. At the six month follow-up, 70% of the mothers were employed and worked an average of 30 hours a week.

Measures.

Parental Bonding Instrument (PBI; Parker, Tupling, & Brown, 1979): This 25 item scale assesses recollections of both the care and control received as a child from both mother and

father. Four variables were derived from this measure: maternal care, paternal care, maternal control, and paternal control.

Adult Self-Perception Profile; Global Self-Esteem Subscale (SE; Messer & Harter, 1986): This 6 item scale assesses global self-worth. One variable, self-esteem was derived from this scale.

Infant Behavior Questionnaire (IBQ; Rothbart, 1978): This scale is a maternal report of infant temperament. Three of the subscales, distress to novelty (fear), distress to limitations (frustration), and soothability were utilized in the present study. Three variables, infant fear, frustration and soothability were derived from this measure.

Maternal Self-Efficacy Scale (MEQ; Teti & Gelfand, 1991): This 10 item scale assesses maternal self-efficacy in relation to 9 specific mothering activities and includes 1 global item. One variable, maternal self-efficacy was derived from this measure.

Social Support Scale (SS; designed by authors): This 4 item scale assesses satisfaction with the amount of support, quality of support, amount of support needed to offer in return, and the amount of positive feedback the mother receives about her parenting from both partners and others. Two variables, partner support and other support were derived from this measure.

Procedure. Mothers completed the PBI and SE prenatally. The IBQ was administered by phone when the infant was 5 moths old. Mothers completed the MEQ and SS scales and returned them during the 6 month playroom visit that served as an assessment of infant temperament as part of a larger ongoing study of the development of infant emotional reactivity and regulation. Maternal behavior was observed at this time.

Mothers were observed interacting with their infants during a 5 minute warm-up period and two potentially emotionally arousing events. During the warm-up, mothers were instructed to help their babies feel comfortable in the room and were also instructed to complete some forms. During the two emotion tasks (1 fear and 1 frustration) the mothers were instructed to interact with their infants in any way they liked. Maternal behavior was coded during these episodes on a scale from 1 to 5 based on the timing, quality, and match of mothers' responses to infants' cues. Scores were based on the entire episode, that is, one instance of insensitive behavior did not warrant a score of 1. The composite of maternal sensitivity during the two emotionally arousing episodes was utilized in the present set of analyses.

Results

Predicting maternal self-efficacy.

Preliminary simple correlations are displayed in Table 1. The full model of maternal self-efficacy, successfully predicted nearly 50% of the variability as illustrated in Table 2. Specific hypotheses were then explored.

Parenting history and self-esteem. Parenting history and self-esteem were significantly associated with each other and with maternal self-efficacy (refer to Table 1), allowing for testing of the proposed role of self-esteem as a mediator. As displayed in Table 3, of the parenting history variables, only maternal care emerged as an independent predictor of maternal self-efficacy. Once self-esteem was entered in the hierarchical regression, maternal care was no longer a significant predictor. Therefore, the association between maternal care and maternal self-efficacy was fully mediated by self-esteem.

Contextual factors. In the overall regression model, infant soothability was significantly associated with maternal self-efficacy over and above the developmental history variables and the other temperament variables, and there was a trend for an association between infant frustration and maternal self-efficacy. In addition, both infant frustration and fear interacted with infant soothability to predict maternal self-efficacy, although the latter was only a trend. These interactions were interpreted using t-test comparisons of high and low groups based on median splits for each variable. Mothers who perceived their infants as both easily frustrated and easily soothed, had significantly higher self-efficacy than mothers who perceived their infants as easily frustrated and low on soothability (t (43) = -2.03, $p < .05$). There was no difference in self-efficacy based on soothability when infants were perceived as less easily frustrated (t (44) = -.72, $p = .48$). This effect is illustrated in Figure 2. The interaction effect functioned similarly for infant fear and soothability. Thus, in both cases, infant soothability appears to buffer the impact of negative reactivity on maternal self-efficacy.

Other support remained a significant predictor of maternal self-efficacy over and above the developmental history and infant temperament variables in the full regression model (see Table 2). As predicted, there were significant temperament by social support interactions. Specifically, partner support interacted significantly with both infant frustration and soothability and other support interacted significantly with infant frustration to predict maternal self-efficacy. Regardless of the source of support, mothers who perceived their infants as less easily frustrated had significantly higher maternal self-efficacy when they had high versus low social support (t (43) = -2.30, $p < .05$ for partner support and t (43) = -2.10, $p < .05$ for other support). This effect of support was not significant when mothers perceived their infants as easily frustrated (t (43) = -.81, $p = .42$ for partner support and t (43) = -.20, $p = .85$ for other support). Contrary to the proposed buffering effect of social support on infant reactivity, these effects appear to be cumulative. That is, mothers with both good support and a relatively easy baby had the highest maternal self-efficacy. This effect is illustrated for other support in Figure 3.

Predicting maternal behavior.

To test the hypothesis that maternal self-efficacy interacted with infant temperament to predict maternal behavior, a hierarchical regression was conducted. The overall regression model was not significant, but there was a significant efficacy by frustration interaction (β = ; $p<$). Two maternal self-efficacy groups were created: a moderately high group consisting of the lower two-thirds of scores, and an extremely high group consisting of the highest third of scores. Frustration groups were based on a median split. Opposite to prediction, high maternal self-efficacy did not buffer the effects of having an easily frustrated child. In fact, mothers who perceived their infants as easily frustrated were significantly less sensitive and responsive if they had extremely high maternal self-efficacy versus moderately high self-efficacy (t (42) = 2.10, $p <$ .05). There was no difference in maternal sensitivity based on maternal self-efficacy for mothers who perceived their infant as less easily frustrated (t (44) =.71, p=.48). This effect is illustrated in Figure 4.

Discussion

Developmental History and Maternal Self-efficacy.

Consistent with attachment theory, positive early parenting history was hypothesized to promote positive feelings of worth. That is, a child's early sense of how acceptable she is to her

parents becomes an important component of her internal working model which generalizes to overall feelings of self-worth (Bowlby, 1973). Individuals with problematic early interactions with parents tend to devalue themselves and have negative expectations about their ability to achieve goals (Bowlby, 1973; Gotlieb & Hammen, 1992). It follows that parenting history would influence both mothers' global feelings of self-esteem and feelings of maternal self-efficacy. Consistent with this hypothesis, parental care and control were significantly associated with maternal self-esteem supporting the hypothesis that early childhood experiences, particularly acceptance from parents, influences the development of positive global self-esteem. This is consistent also with the research findings that the children of parents with authoritative parenting styles, those characterized by moderately high warmth and control, are the most likely to have high self-esteem (Coopersmith, 1967; Erford, 1995; Lamborn, et al, 1991; Steinberg, Elmen, & Mounts, 1989). That the association between early parenting history and maternal self-efficacy is mediated by global self-esteem supports the model-based prediction that global feelings of self-worth generalize to specific behavioral domains, such as mothering. These effects were independent of infant temperament, further supporting the theory that maternal self-efficacy is rooted, at least in part, in mothers' early remembered experiences of care from parents, in particular mothers.

Context and Maternal Self-efficacy

Current contextual factors play a role in the development of maternal self-efficacy as well. Although there was no significant association between infant negative reactivity (fear and frustration) and maternal self-efficacy as predicted, there was a positive association between infant soothability and maternal self-efficacy. Given infant soothability is an adaptive infant characteristic, it may exert a positive influence on maternal self-efficacy regardless of other factors. Alternatively, mothers who are more efficacious may view their infants as more easily soothable. However, infant negative reactivity alone is not sufficient to predict maternal self-efficacy and must be examined in relation to both other infant characteristics and the larger social context in order to understand its influence on maternal self-efficacy. Infant soothability functioned as a buffer between infant reactivity and maternal self-efficacy. That is, mothers with reactive (both easily frustrated and frightened) infants had significantly higher maternal self-efficacy if they also perceived their infants as easily soothable. Even though these infants are reactive, their mothers experience positive contingencies in which they are ultimately able to soothe them, an atmosphere Goldberg (1977) predicted would enhance efficacy. In contrast, mothers who perceive their infants as reactive and less soothable have likely had limited experience feeling successful at soothing their children, undermining their sense of maternal self-efficacy.

Other support emerged as a significant main effect over and above developmental history and infant temperament in the regression, consistent with the direct effect of social support on efficacy reported by Cutrona and Troutman (1986), although this effect was qualified by significant support (partner and other) by infant temperament interactions. These interactions did not operate as predicted, however. Social support was expected to buffer the negative impact of infant reactivity on maternal self-efficacy similar to relations found between support and temperament in relation to both attachment (Crockenberg, 1981) and maternal sensitivity (Crockenberg & McCluskey, 1986) in previous studies. In fact, a cumulative effect of support and temperament was observed. That is, mothers who had children who they perceived as less easily frustrated and who were very satisfied with their social support had the highest maternal self-efficacy, similar to Crockenberg's (1987) finding that social support was positively associated with maternal behavior in a sample of adolescent mothers only when stress was low.

In both cases, partners and others may not have provided the type of support that is most useful under stressful conditions. This is consistent with Crockenberg's (1986) thesis that parents of children with atypical characteristics, in this case high reactivity, may especially benefit from additional support from professionals or paraprofessionals.

Maternal Self-Efficacy, Infant Temperament, and Maternal Behavior

Neither maternal self-efficacy nor infant temperament were associated with maternal sensitive and responsive behavior as linear main effects. Moreover, although infant temperament and maternal self-efficacy interacted to predict maternal behavior, the interaction functioned differently than predicted. Mothers with extremely high self-efficacy were less sensitive and responsive toward their easily frustrated babies than mothers with moderately high feelings of efficacy. This interaction and the lack of a main effect for maternal self-efficacy may be explained by the theory of illusory control (Donovan & Leavitt, 1989; Donovan, Leavitt, & Walsh, 1990) which posits that mothers with an unrealistic sense of control over infant behavior are unable to respond sensitively and appropriately to infants' cues. According to this theory, mothers with high illusory control are less attentive to infants' cues, more likely to respond to them defensively, and more likely to display learned helplessness when attempting to stop an infant's cries.

Data from the present study are consistent with the theory of illusory control. Close inspection of scatterplots suggest a mild, although non-significant, curvilinear association between maternal self-efficacy and behavior attributable to a number of mothers at the high end of the efficacy distribution who displayed less sensitive and responsive behavior. These mothers with extremely high levels of maternal self-efficacy may feel this illusory, or unrealistic, degree of control over a situation that is only moderately controllable, decreasing their ability to respond sensitively to infant cues. They may feel helpless when their expectations are violated and hence ignore their babies' negative affect, or they may feel annoyed with their babies for failing to calm and continue with their own agenda (e.g., forcing a distressed baby to touch the distressing toy).

The effect of illusory control may be most apparent when infant characteristics are also taken into account. That is, high illusory control may be especially problematic in relation to a reactive infant because this is the context in which mothers have the least control over their infants' behavior. A mother with a moderate sense of control or efficacy likely recognizes that her infant also plays a role and may not engage in self-blame for difficulties soothing her infant; thus, she is more likely to persist in the face of challenge. Recent literature in the field of coping is consistent with this interpretation. When events are uncontrollable, primary control strategies such as problem focused coping are less adaptive and secondary control strategies such as distraction, acceptance and cognitive restructuring are more adaptive (Compas, 1987; Forsythe & Compas, 1987; Weisz, McCabe, & Denning, 1994). The significant interaction between infant frustration and maternal self-efficacy in the present study offers even greater support for the theory of illusory control because maternal behavior was observed in relation to her own child, whereas maternal behavior in the Donovan, Leavitt, and Walsh (1990) study was observed in relation to an audiotape of a non-related crying infant.

Table 1

Zero order correlations between predictor variables and maternal self-efficacy

Variables	1	2	3	4	5	6	7	8	9	10
1.Self-esteem										
2.Maternal Care	.40**									
3.Paternal Care	.35**	.47**								
4.Maternal Control	-.18*	-.42**	-.12							
5.Paternal Control	-.32**	-.39**	.34**	.53**						
6.Partner Support	.03	.20*	.25**	-.14	.03					
7.Other Support	.14	.37**	.43**	-.25**	-.05	.52**				
8.Infant Fear	-.05	-.10	.06	.09	-.11	.22*	-.08			
9.Infant Frustration	-.14	-.16	-.07	.03	-.08	-.14	-.23*	.11		
10.Infant Soothability	-.09	.03	.01	.03	.00	.25**	.19*	.07	-.29**	
11.Maternal Self-efficacy	.38**	.27**	.16[1]	-.12	-.23*	.17[1]	.31**	.05	-.29**	.28**

Note: Full sample size is n=92; [1]p<.10; *p<.05; **p<.01 (one-tailed)

BEST COPY AVAILABLE

Table 2

Hierarchical regression testing the full model of maternal self-efficacy

		β	T	R^2 change	F
Step 1	Maternal Care	.18	1.32		
	Paternal Care	-.09	-.71		
	Maternal Control	.03	.26		
	Paternal Control	-.12	-.87		
	Self-esteem	.29	2.48*	.17*	
Step 2	Infant Fear	.08	.75		
	Infant Frustration	-.19	1.78^{t}		
	Infant Soothability	.22	2.15*	.11*	
Step 3	Partner Support	.02	.18		
	Other Support	.27	2.09*	.05^{t}	
Step 4	Fear X Soothability	.25	1.90^{t}		
	Frustration X Soothability	.26	2.00*		
	Partner Support X Fear	.02	.15		
	Partner Support X Frustration	-.44	-2.72**		
	Partner Support X Soothability	.26	2.22*		
	Other Support X Fear	-.01	-.03		
	Other Support X Frustration	.30	2.08*		
	Other Support X Soothability	-.16	-1.37	.16*	
Total Model				.49	3.46***

Note: ^{t}p<.10; *p<.05; **p<.01; ***p<.001

Table 3

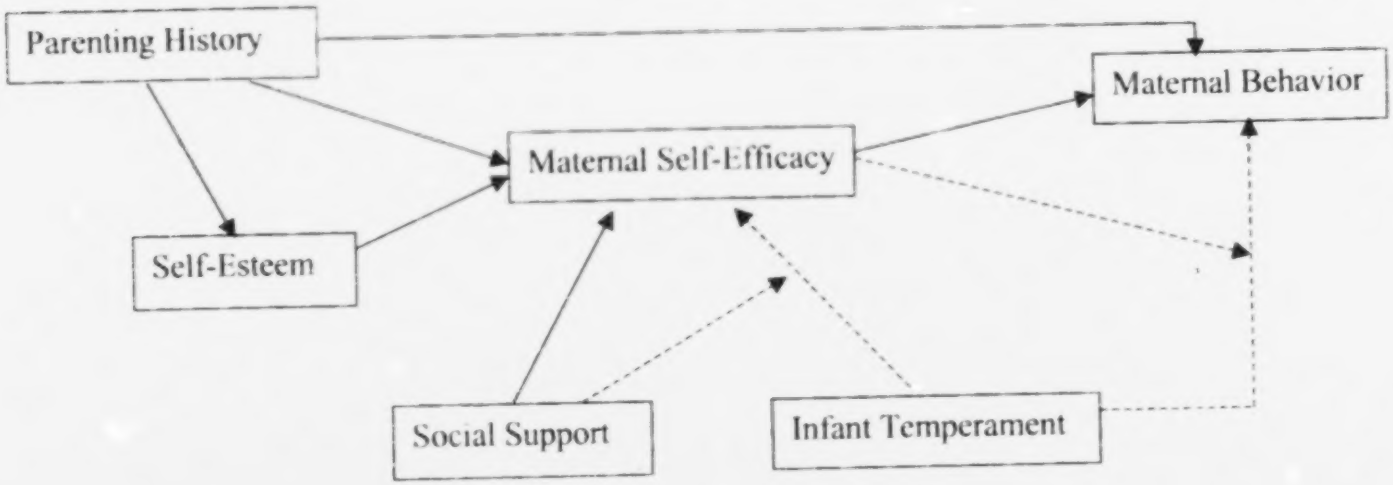
Hierarchical multiple regressions assessing the role of self-esteem as a mediator between parenting history and maternal self-efficacy.

	β	t	F	R^2change
Regression 1				
Maternal care	.24	2.17*		
Paternal control	-.14	-1.25	4.89**	.10**
Regression 2				
1. Self-esteem	.38	3.87***	14.99**	.14***
2. Maternal care	.14	1.33	8.45**	.02

Note: *p<.05; **p<.01; ***p<.001

Figure 1

Model of development of maternal self-efficacy and relation to maternal behavior



Note: ——► main effect
- - - - - ► interaction effect

Figure 2

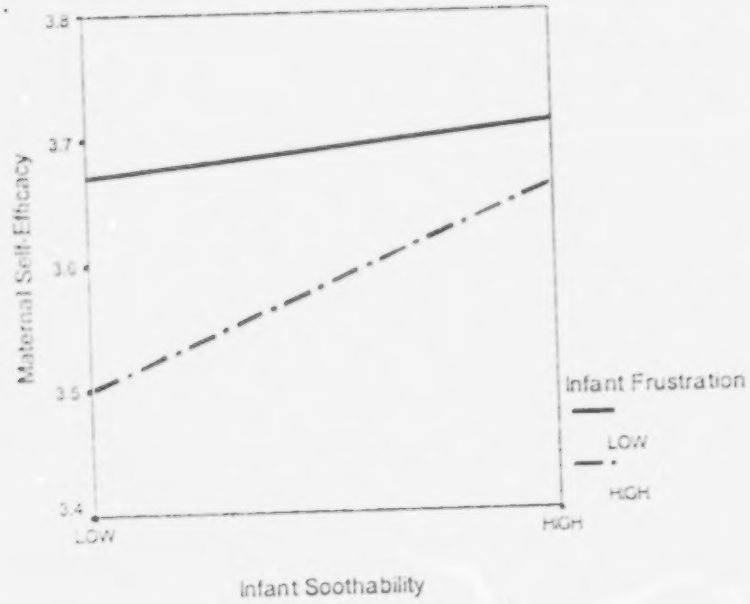


Figure 3

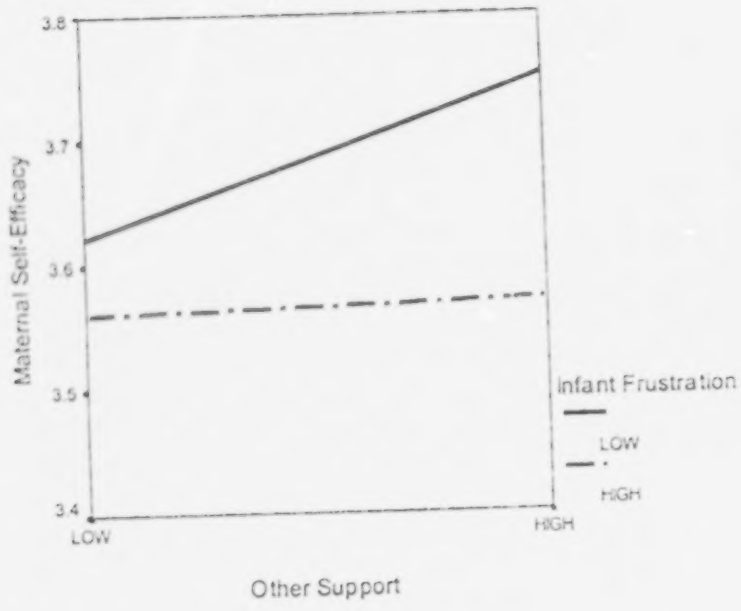
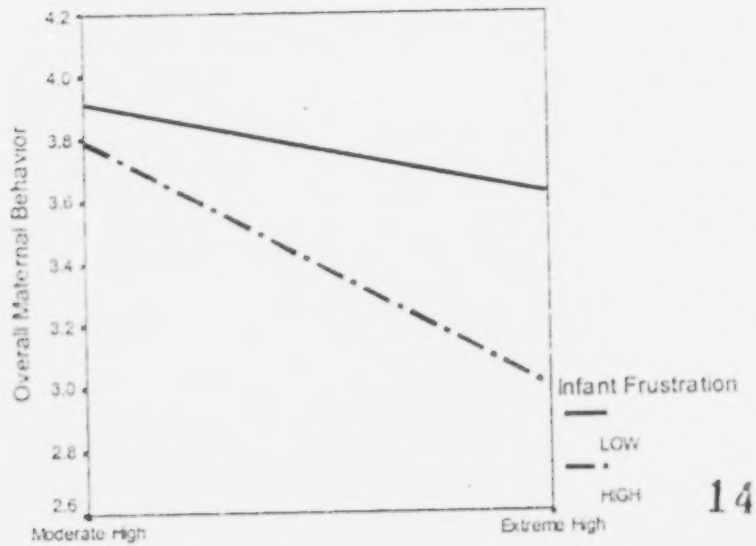


Figure 4



References

Bowlby, J. (1973). Attachment and loss: Vol. 2: Separation. New York: Basic.

Coopersmith, S. (1967). The antecedents of self-esteem. San Francisco: W. H. Freeman.

Compas, B.E. (1987). Coping with stress during childhood and adolescence. Psychological Bulletin, 101(3), 393-403.

Crockenberg, S. (1981). Infant irritability, mother responsiveness, and social support influences on the security of infant-mother attachment. Child Development, 52, 857-865.

Crockenberg, S. (1986). Are temperamental differences in babies associated with predictable differences in caregiving? In J. V. Lerner & R. M. Lerner (Eds.), New directions for child development: No. 31. Temperament and social interaction in infants and children (pp.53-73). San Francisco: Jossey-Bass.

Crockenberg, S. (1987). Support for adolescent mothers during the postnatal period: Theory and research. In C. Z. Bankydis (Ed.) Research on support for parents and infants in the postnatal period (pp.3-24). Norwood, NJ: Ablex

Crockenberg, S., & McCluskey, K. (1986). Change in maternal behavior during the baby's first year of life. Child Development, 57, 746-753.

Cutrona, C. E., & Troutman, B. R. (1986). Social support, infant temperament, and parenting self-efficacy: A mediational model of postpartum depression. Child Development, 57, 1507-1518.

Donovan W.L.,& Leavitt, L.A. (1989). Maternal self-efficacy and infant attachment: Integrating physiology, perceptions, and behavior. Child Development, 60, 460-472.

Donovan, W.L., Leavitt, L.A., & Walsh, R.O. (1990). Maternal self-efficacy: Illusory control and its effect on susceptibility to learned helplessness. Child Development, 61, 1638-1647.

Erford, B.T. (1995). Parent autonomy-enhancement and development of self-efficacy. Psychological Reports, 77, 1347-1353.

Forsythe, C.J. & Compas, B. E. (1987). Interaction of cognitive appraisals of stressful events and coping: Testing the goodness of fit hypothesis. Cognitive Therapy and Research, 11(4), 473-485.

Goldberg, S. (1977). Social competence in infancy: A model of parent-infant interaction. Merrill-Palmer Quarterly, 23 (3), 163-177.

Gotlib, I. & Hammen, C. (1992). Psychological aspects of depression: Toward cognitive and interpersonal integration. London: Wiley.

Gross, D., Conrad, B. Fogg, L., & Wothke, W. (1994). A longitudinal model of maternal self-efficacy, depression, and difficult temperament in toddlerhood. Research in Nursing & Health, 17, 207-215.

Lamborn, S.D., Mounts, N.S., Steinberg, L., & Dornbusch, S.M. (1991). Patterns of competence and adjustment among adolescents from authoritative, authoritarian, indulgent, and neglectful families. Child Development, 62, 1049-1065.

Maccoby, E., & Martin, J. (1983). Socialization in the context of the family: Parent-child interaction. In E.M Hetherington (Ed.), P.H. Mussen (Series Ed.), Handbook of child psychology: Vol. 4. Socialization, personality, and social development (pp.1-101). New York: Wiley.

Messer, B., & Harter, S. (1986). Manual for the Adult Self-Perception Profile. University of Denver.

Parker, G., Tupling, H., & Brown, L. (1979). A parental bonding instrument. British Journal of Medical Psychology, 52, 1-10.

Rothbart, M.K. (1981). Measurement of temperament in infancy. Child Devlopment, 52, 569-578.

Steinberg, L., Elmen, J.D., & Mounts, N.S. (1989). Authoritative parenting, psychosocial maturity, and academic success among adolescents. Child Development, 60, 1424-1436.

Teti, D. M., & Gelfand, D. M. (1991). Behavioral competence among mothers of infants in the first year: The mediational role of maternal self-efficacy. Child development, 62, 918-929.

Weisz, J. R., McCabe, M. A., & Dennig, M. D. (1994). Primary and secondary control among children undergoing medical procedures: Adjustment as a function of coping style. Journal of Clinical and Consulting Psychology, 62(2), 324-334.